Doc Code: AP.PRE.REQ

PTO/SB/33 (07-05)
Approved for use through xx/xx/200x. OMB 0651-00xx
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional): 1-25206

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)]

on November 14, 2005

Signature: Wanda J. Lawrence

Typed or printed name: Wanda J. Lawrence

Application Number	Filed
10/829,536	April 22, 2004

First Named Inventor: Leo Gilles

Art Unit	Examiner
3683	R. Siconolfi

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
Note: No more than five (5) pages may be provided.

I am the

- [ ] applicant/inventor.
- [ ] assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)
- [X] attorney or agent of record. Registration number 36,888
- [ ] attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34 _____

Signature

Douglas V. Pavelko
Typed or printed name

(419) 255-5900
Telephone number

November 14, 2005
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

[X] *Total of 3 forms are submitted.

PATENT

CERTIFICATE OF MAILING

I hereby certify that this document is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date set forth below.

Wanda J. Lawrence
(signature)

11-14-05
(date of signature and deposit)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	)	
Leo Gilles	)	Group Art Unit 3683
	)	
Serial No. 10/829,536	)	
	)	Examiner Robert Siconolfi
Filed: April 22, 2004	)	
	)	
For: DISC BRAKE	)	Attorney Docket 1-25206

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REMARKS ACCOMPANYING PRE-APPEAL BRIEF REQUEST FOR REVIEW

Honorable Sir:

Pursuant to the procedure specified in the Notice published in the Official Gazette on July 12, 2005, review is requested for the following reasons.

The final rejection contains clear errors in that claimed limitations are clearly not met by the cited reference.

Regarding the limitations not met by the prior art, WO 99/37939 fails to show or suggest: 1) a disc brake having at least one force transducer disposed in a first force transmission path between the actuator device and at least one of the brake shoes, *wherein a maximum component of force acting upon the force transducer upon generating of the clamping force is limited,* as recited in Claim 1; 2) a disc brake having a *force limiting assembly for limiting the force acting upon the force*

transducer upon generation of the clamping force, as recited in Claim 26; and 3) a disc brake having a *first force transmission path* arranged between the actuator and at least one of the brake shoes; a *force sensing element disposed in the first force transmission path*; and *a second force transmission path* arranged between the actuator and at least one of the brake shoes, *the second force transmission path bypassing the force sensing element*, as recited in Claim 27.

As explained in the amendment filed April 22, 2005, in the paragraph bridging pages 7 and 8, WO 99/37939 is completely silent with respect to any limited maximum component of force acting upon the force transducer. The Examiner has *presumed* that the ends of the grooves (39') form a "stop" for limiting the force component applied to the pressure pad (36). However, as described in WO 99/37939 at page 5, lines 28-30, the pressure pad (36) has two parallel walls (41) connected at their circumference (42) by means of welding, and the internal space enclosed between the parallel walls (41) is filled with a hydraulic fluid (43). Importantly, it is noted that hydraulic fluids, such as the fluid (43) contained within the pressure pad (36), are essentially *incompressible*. In other words, the ends of the grooves (39') do *not* form a "stop" as suggested by the Examiner, because the nut (39) does not travel that far. Rather, all of the actuating force (i.e., without limit) is applied to the actuating piston (35) through the pressure pad (36).

As explained in the request for reconsideration filed October 11, 2005, on page 8, second paragraph and continuing to the bottom of the page, in the particular embodiment of cited reference WO 99/37939 considered relevant to the present invention (i.e. Fig. 3), the "intermediate pressure means" comprises the hydraulic pressure pad (36) filled with the hydraulic fluid (43). This hydraulic fluid also fills a channel (51) which extends from the internal space of the pressure pad (36) and is in fluid communication with a load measuring device (50). The hydraulic fluid thereby serves to *transmit* the force imparted to the actuating piston (35) by the screw and nut mechanism (24, 39) to the load measuring device (50) as a hydraulic pressure. Thus, it is quite clear that WO 99/37939 does not disclose or suggest any *limit* to the force transmitted by the pressure pad (36), but rather teaches that the incompressible

hydraulic fluid (43) in the pressure pad (36) and channel (51) transmits the actuating force of the screw and nut actuating mechanism (24, 39) to the load measuring device (50) during operation of the brake actuator.

The Examiner states in the Official Action in paragraph 5 that "*The pressure pad clearly will compress and once the end of the groove is reached, no additional force will be applied because it will reach the maximum amount of compression and therefore, the maximum force is limited.*" Thus, the Examiner argues that the pressure pad (36) substantially compresses in transmitting pressure to the load measuring device (50). This is incorrect. As stated above, hydraulic fluids are substantially incompressible. Accordingly, although some very small amount of compression may occur, it is generally so small as to be negligible. Furthermore, when one considers the teaching and intention of WO 99/37939, it becomes apparent that the pressure pad (36) should **not** undergo any substantial axial compression in order to ensure that the main purpose of the pressure pad (36) is fulfilled.

According to the teaching of WO 99/37939 at page 1, lines 26-32, the liquid-filled pressure pad (36) is designed to provide an even distribution of the axial actuation force to the actuating piston (35), even though the nut (39) of the screw mechanism (10) may not be in perfect parallel alignment with the piston (35). That is, the pressure pad (36) is designed to compensate for any such misalignment of the nut (39) or transverse loadings. Nevertheless, WO 99/37939 clearly states that the axial stiffness of the pressure pad should be sufficiently high to obtain the desired actuating force. This may be expected from the liquid-filled pad (36) because, while it may adapt its shape to accommodate any non-parallel alignment of the nut (39), being a hydraulic element it remains substantially incompressible.

Thus, there is absolutely no hint, teaching or suggestion in WO 99/37939 that the pressure pad (36) is designed to deform so that only a *limited* axial force is transmitted by the pad (36). In fact, *limiting* the axial force in the device of cited reference WO 99/37939 would be contrary to the teaching of WO 99/37939 because this could give a false measurement result from the load measuring device (50). Cited reference WO 99/37939 does *not* teach that the load measuring device (50) should be

protected from excessive loads. Furthermore, if the liquid-filled pressure pad (36) *did* compress such that the nut (39) would strike against the ends of the grooves (39'), the pad (36) would no longer function to compensate for misalignment of the nut (39) or transverse loadings. Rather, any undesirable transverse loadings would then be applied directly to the piston (35).

The Examiner states in the Advisory Action dated November 2, 2005 that: "*Axially stiff does not mean the pad will not compress significantly but rather it take a significant amount of force.*" The point is, however, that an axial compression of the pressure pad (36) is not apparent from cited reference WO 99/37939. As further explained in the request for reconsideration on page 9, first paragraph and continuing to the paragraph bridging pages 9 and 10, the main issue in the present case is that, in WO 99/37939, the hydraulic fluid that fills the pressure pad (36) and communicates with the force sensor (50) does **not** undergo any significant axial compression. Accordingly, the actuating force is transmitted to the actuating piston (35) through the hydraulic pressure pad (36). Not only is the specification of WO 99/37939 silent with this respect to any supposed deformation of the pressure pad (36), it actually teaches the contrary - i.e., it teaches that the "intermediate pressure means" is axially stiff in order to ensure good transmission of the actuating force. There is no disclosure, teaching or suggestion in WO 99/37939 that the pressure pad (36) deforms to enable the nut (39) of the screw mechanism (10) to reach the end of the grooves (39'), which then function as a "stop", as alleged by the Examiner.

Further, in the Advisory Action, the Examiner states that the "*applicant does not explain how fluid pressure is transmitted to the sensor if the pad does not undergo axial compression. The sensor and pressure pad is a closed system and pressure increases as volume decreases. The only way to change the volume is for the pad to compress. No disclosure is made because it is impossible for the device to work without compression as one of ordinary skill in the art would understand.*" Again, the Examiner's logic is confused. The pressure in the hydraulic fluid increases as the force applied by the nut and screw mechanism increases, but with negligible change in fluid volume. That is, although a miniscule compression may occur in the hydraulic

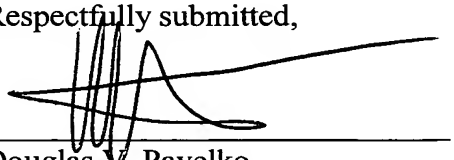
fluid, the compression is essentially insignificant. The outer walls (41) of the pressure pad (36) permit transmission of the force from the nut (39) to the hydraulic fluid, and the hydraulic fluid *transmits* the pressure to the load measuring device (50). However, this does not mean that there is any significant reduction in volume of the pressure pad (36). As the Examiner notes, the system is 'closed', so the hydraulic fluid does not flow anywhere. The Examiner's incorrect understanding that there is, or must be, a significant volume decrease in the pressure pad is a key factor that has led to the clearly erroneous rejection of the claims based on the disclosure of WO 99/37939.

The pressure pad (36) does *not* compress such that the nut (39) travels to the end of the grooves (39') since the hydraulic pressure pad (36) is effectively incompressible.

Summarizing, WO 99/37939 does not include any teaching or suggestion that the force acting on the force sensor device (50) is limited in any way. To the contrary, limiting the force would falsify the measuring result of the force sensor device (50) in higher force regions and would compromise the disclosed purpose of the pad (36) in compensating for misalignment of the nut (39) and transverse loadings. The absence of any remark in cited reference WO 99/37939 that the ends of the grooves (39') may ever be reached or that in such situations the force would actually be limited is clear evidence of the inadmissible hindsight applied by the Examiner.

In view of the foregoing reasons, Claims 1-28 are in condition for allowance. Favorable action is respectfully solicited.

Respectfully submitted,



Douglas V. Pavelko
Attorney for Applicants
Reg. No. 36,888

Dated: November 11, 2005
MacMillan, Sobanski & Todd, LLC
One Maritime Plaza, Fourth Floor
720 Water Street
Toledo, Ohio 43604
(419) 255-5900